

WELL COMPLETION FOAMED SPACER FLUIDS AND METHODS

CROSS-REFERENCE TO RELATED APPLICATION

P. 1. This Application is a Divisional of Serial No. 10/393,965, filed March 21, 2003, ~~pending~~ *now patent no 6,668,927*

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

[0001] The present invention relates to foamed spacer fluids and methods of using the spacer fluids in well completions such as primary cementing.

2. DESCRIPTION OF THE PRIOR ART

[0002] Well bores are commonly drilled using the rotary drilling method. In that method, a drill bit connected to a drill string is rotated while drilling fluid is circulated through the drill string, through the drill bit and upwardly to the surface through the annulus between the drill string and the walls of the well bore being drilled. The drilling fluid functions to cool the drill bit, to remove cuttings from the well bore and to maintain hydrostatic pressure on the well bore. The hydrostatic pressure prevents formation fluids from entering the well bore during drilling.

[0003] The drilling fluid also forms a filter cake on the walls of the well bore which prevents the drilling fluid from being lost into permeable subterranean zones. However, the drilling fluid in the filter cake dehydrates and gels thereby forming a layer of solids and gelled drilling fluid on the walls of the well bore. While this filter cake is advantageous during drilling, it is detrimental to obtaining effective drilling fluid displacement and removal from the walls of the well bore.